REMARKS

1. Declaration:

A new COMBINED DECLARATION AND POWER OF ATTORNEY is requested for replacement because the original COMBINED DECLARATION AND POWER OF ATTORNEY is un-readable.

Response:

Included with this reply is a new COMBINED DECLARATION AND POWER OF ATTORNEY, as requested.

2. Claim rejections under 35 USC 102:

Claims 1-3, 5-10, 15-20, 21-23 and 25-30 are rejected under 35 U.S.C. 102(a) as being anticipated by APPLICANT'S PRIOR ART.

Response:

2.1 Regarding claim 1, claim 1 is amended in order to overcome rejection under 35 U.S.C. 102(a) as set forth on pages 1-2 of the above detailed Office action, the limitations of claim 2 and allowable claim 4 having been incorporated into the base claim. With the additional limiting language now included, claim 1 recites the essence of the claimed invention, i.e. the encoding of the negative control code using one's complement arithmetic.

2.2 Claim 2 is hereby cancelled.

2.3 Claim 3 is retained in its original form; the Applicant assumes that if the base claim is considered to be allowable, then dependent claim 3 should also be allowable.

2.4 Claim 4 is hereby cancelled.

2.5 Claim 5 is amended to reflect the changes in structure to preceding claims, but otherwise is retained in its original form; the Applicant assumes that if the base claim is considered to be allowable, then dependent claim 5 should also be allowable.

2.6 Regarding claims 6-10, claims 6-10 are retained in their original forms; these claims being dependent upon claim 1, the Applicant assumes that if the independent claim is considered to be allowable, then dependent claims 6-10 should also be allowable.

2.7 Regarding claim 11, claim 11 is amended in order to overcome rejection under 35 U.S.C. 102(a) as set forth on page 7 of the above detailed Office action, the limitations of claim 19 having been incorporated into the base claim, and hence the amended claim 11 recites an essential principle of operation of the claimed invention, i.e. that "the constant current [supplied to the output when the negative current is provided] corresponds to a unit current and the negative current is a multiple of the unit current"; it is this method that effectively allows the use of one's complement arithmetic. This method is not taught by the prior art, and hence the Applicant politely requests reconsideration of claim 11. Furthermore, claim 11 is amended by the insertion of the word "control" in line 3, in order to provide an antecedent basis for the term "the negative control code" in lines 7-8.

2.8 Claim 19 is hereby cancelled.

2.9 Regarding claims 12-13, 15-18 and 20; these claims being dependent upon claim 11, the Applicant assumes that should the independent claim be considered allowable, then the dependent claims detailed above are also allowable. Additionally, claims 15 & 16 are amended for grammatical reasons.

3.0 Regarding claim 21, the Applicant politely requests reconsideration of claim 21 in light of the following discussion, and based on the assertion that the primary

difference between the claimed invention and the prior art is not only the use of one's complement arithmetic, but also the inclusion and operation of the 'assistant electrical module'. The Examiner cites the assistant electrical module (Fig.5, item 70D refers) as being equivalent to the negative current source of the prior art (Fig.1, item 20D), in combination with the switch Co (Fig.1, item 22). The assistant electrical module 70D is a negative current source, however, it has a negative current output of 1I (paragraph 0035, lines 1-2) as opposed to 8I in the prior art, and is also subject to a different truth table (Fig.6 refers) to that of the prior art negative current source 20D (please see Fig.2). The prior art negative current source 20D is connected to the node Na by the switch Co 22 when the Co bit of the control logic is set, i.e. logic '1', thus supplying a current of –8I as part of the prior art process of providing an analog output according to a two's complement binary input code, via a decoding process using two's complement arithmetic. The assistant electrical module 70D of the claimed invention is connected to the node Na by the switch A3 72 when the A3 bit of the input code is set, thus supplying a current of –1I as part of the process of providing an analog output according to a two's complement binary input code, via a decoding process using one's complement arithmetic. The claimed invention, although achieving the same output according to the same input code when compared to the prior art, employs a different structure to enable the process of generating positive and negative control codes. The arrangement of input logic and the assistant electrical module are key enabling elements of the claimed invention, and are not taught by the prior art. The above is supported by discussion and by example in paragraphs 0034, 0035 & 0036 of the detailed description. The limitation in claim 21 that reflects the above differences is 'an assistant electrical module for providing a constant current to the output when the negative electrical module provides a negative current to the output.'

3.1 Regarding claims 22-23 and 25-30; these claims being dependent upon claim 21, the Applicant assumes that should the independent claim be considered allowable, then the dependent claims detailed above are also allowable.

3. Specification and drawing amendments:

Paragraphs [0037] and [0039] are amended to fix typos. The amendment in paragraph [0037] is supported in Fig.7. The amendment in paragraph [0039] is supported in the dashed block 92 of Fig.8. No new matter is introduced.

Sincerely,

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